

## SEARCH REQUEST FORM

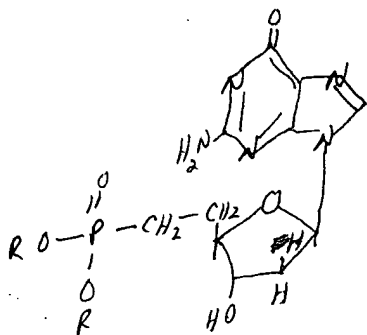
11-134

Requestor's Name: GARY L. KUNZ Serial Number: 07/652,998  
Date: 11-10-95 Phone: X4623 Art Unit: 1803

## Search Topic:

Please write a detailed statement of search topic. Describe specifically as possible the subject matter to be searched. Define any terms that may have a special meaning. Give examples or relevant citations, authors keywords, etc., if known. For sequences, please attach a copy of the sequence. You may include a copy of the broadest and/or most relevant claim(s).

PLEASE SEARCH:

 $R = H, \text{phenyl, or alkyl (C}_1\text{--C}_{12}\text{)}$ 

FOR OFFICIAL USE ONLY

THIS IS BASICALLY 2'-DEOXYGUANOSINE-5'-TRIPHOSPHATE  
WITH A -CH<sub>2</sub>- REPLACING THE 5'-OXYGEN

Pull Case  
Immediately

## STAFF USE ONLY

Date completed: 11/13/95  
Searcher: [signature]  
Terminal time: 40  
Elapsed time: \_\_\_\_\_  
CPU time: \_\_\_\_\_  
Total time: 50  
Number of Searches: 1 + 4 = 5  
Number of Databases: 5

## Search Site

\_\_\_\_ STIC  
☒ CM-1  
\_\_\_\_ Pre-S

## Type of Search

\_\_\_\_ N.A. Sequence  
\_\_\_\_ A.A. Sequence  
☒ Structure  
\_\_\_\_ Bibliographic

## Vendors

\_\_\_\_ IG Suite  
☒ STN  
\_\_\_\_ Dialog  
\_\_\_\_ APS  
\_\_\_\_ Geninfo  
\_\_\_\_ SDC  
\_\_\_\_ DARC/Questel  
\_\_\_\_ Other

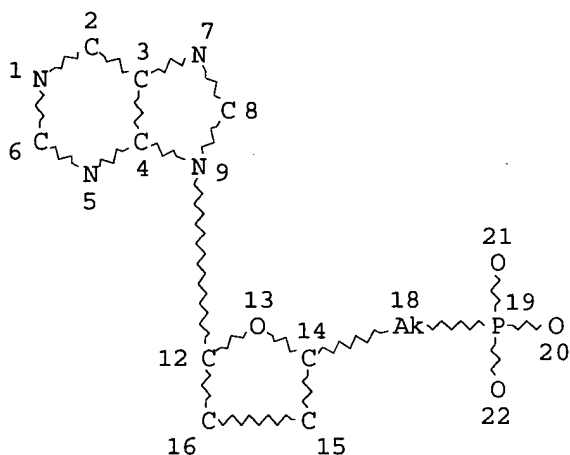
=> fil reg  
FILE 'REGISTRY' ENTERED AT 11:54:50 ON 13 NOV 95  
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STRUCTURE FILE UPDATES: 10 NOV 95 HIGHEST RN 170078-12-3  
DICTIONARY FILE UPDATES: 12 NOV 95 HIGHEST RN 170078-12-3

TSCA INFORMATION NOW CURRENT THROUGH JUNE 1995

Please note that search-term pricing does apply when  
conducting SmartSELECT searches.

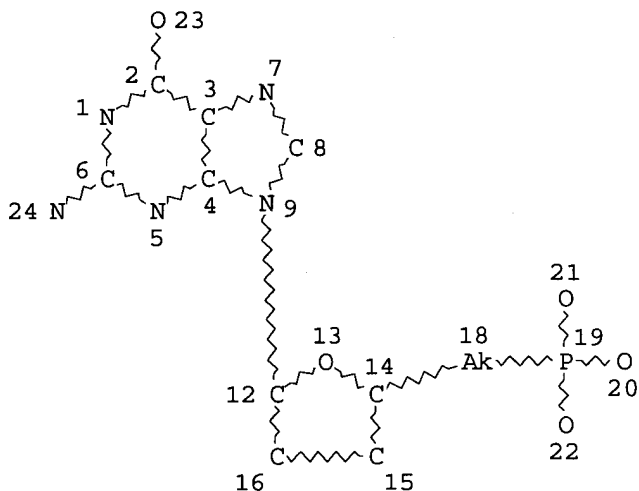
=> d stat que 19  
L1 STR



NODE ATTRIBUTES:  
DEFAULT MLEVEL IS ATOM  
DEFAULT ECLEVEL IS LIMITED

GRAPH ATTRIBUTES:  
RING(S) ARE ISOLATED OR EMBEDDED  
NUMBER OF NODES IS 19

STEREO ATTRIBUTES: NONE  
L2 196 SEA FILE=REGISTRY SSS FUL L1  
L4 STR



NODE ATTRIBUTES:  
DEFAULT MLEVEL IS ATOM  
DEFAULT ECLEVEL IS LIMITED

GRAPH ATTRIBUTES:  
RING(S) ARE ISOLATED OR EMBEDDED  
NUMBER OF NODES IS 21

STEREO ATTRIBUTES: NONE

L5 23 SEA FILE=REGISTRY SUB=L2 SSS FUL L4  
L6 3 SEA FILE=REGISTRY L5 AND (C25H28N5O7P OR C11H16N5O6P OR C11H16N5O7P)/MF  
L7 2 SEA FILE=REGISTRY 144822-55-9/CRN OR 117544-95-3/CRN OR 117513-96-9/CRN  
L8 1 SEA FILE=REGISTRY L5 AND "C12H18N5O6P.NA"/MF  
L9 6 SEA FILE=REGISTRY L6 OR L7 OR L8

=> d his 19-

(FILE 'REGISTRY' ENTERED AT 11:35:43 ON 13 NOV 95)  
L9 6 S L6 OR L7 OR L8

FILE 'HCAOLD' ENTERED AT 11:54:36 ON 13 NOV 95  
L10 0 S L9

FILE 'HCAPLUS' ENTERED AT 11:54:42 ON 13 NOV 95  
L11 2 S L9 OR L9/D

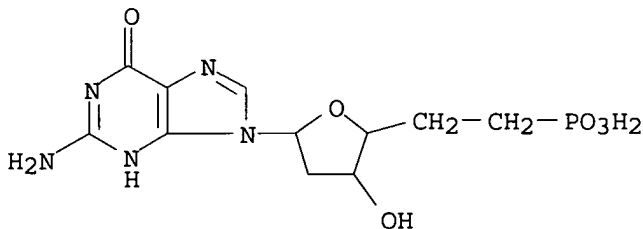
FILE 'REGISTRY' ENTERED AT 11:54:50 ON 13 NOV 95

=> d ide can 19 1-6

L9 ANSWER 1 OF 6 REGISTRY COPYRIGHT 1995 ACS  
RN 144822-56-0 REGISTRY  
CN 6H-Purin-6-one, 2-amino-1,9-dihydro-9-(2,5,6-trideoxy-6-phosphono-.beta.-D-erythro-hexofuranosyl)-, monosodium salt, compd. with N,N-diethylethanamine (1:1) (9CI) (CA INDEX NAME)  
MF C11 H16 N5 O6 P . C6 H15 N . Na  
SR CA  
LC STN Files: CA, CAPLUS

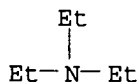
CM 1

CRN 144822-55-9  
CMF C11 H16 N5 O6 P  
CDES 5:B-D-ERYTHRO



CM 2

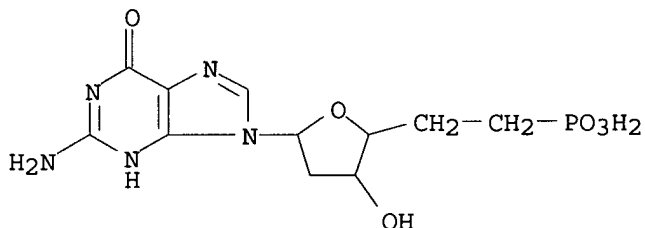
CRN 121-44-8  
CMF C6 H15 N



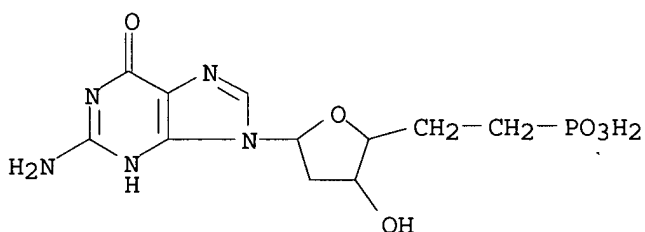
## 1 REFERENCES IN FILE CAPLUS (1967 TO DATE)

REFERENCE 1: 118:7326

L9 ANSWER 2 OF 6 REGISTRY COPYRIGHT 1995 ACS  
RN 144822-55-9 REGISTRY  
CN 6H-Purin-6-one, 2-amino-1,9-dihydro-9-(2,5,6-trideoxy-6-phosphono-  
.beta.-D-erythro-hexofuranosyl)- (9CI) (CA INDEX NAME)  
MF **C11 H16 N5 O6 P**  
CI COM  
SR CA  
DES 5:B-D-ERYTHRO



L9 ANSWER 3 OF 6 REGISTRY COPYRIGHT 1995 ACS  
RN 144822-54-8 REGISTRY  
CN 6H-Purin-6-one, 2-amino-1,9-dihydro-9-(2,5,6-trideoxy-6-phosphono-  
.beta.-D-erythro-hexofuranosyl)-, disodium salt (9CI) (CA INDEX  
NAME)  
MF **C11 H16 N5 O6 P . 2 Na**  
SR CA  
LC STN Files: CA, CAPLUS  
DES 5:B-D-ERYTHRO  
CRN (144822-55-9)

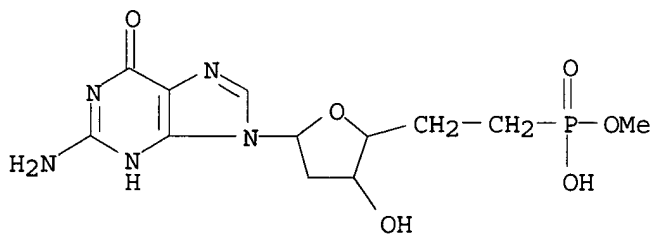


● 2 Na

1 REFERENCES IN FILE CA (1967 TO DATE)  
1 REFERENCES IN FILE CAPLUS (1967 TO DATE)

REFERENCE 1: 118:7326

L9 ANSWER 4 OF 6 REGISTRY COPYRIGHT 1995 ACS  
RN 144822-53-7 REGISTRY  
CN 6H-Purin-6-one, 2-amino-1,9-dihydro-9-[2,5,6-trideoxy-6-(  
hydroxymethoxyphosphinyl)-.beta.-D-erythro-hexofuranosyl]-,  
monosodium salt (9CI) (CA INDEX NAME)  
MF **C12 H18 N5 O6 P . Na**  
SR CA  
LC STN Files: CA, CAPLUS  
DES 5:B-D-ERYTHRO

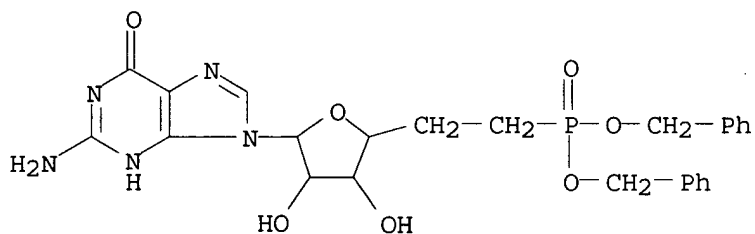


● Na

1 REFERENCES IN FILE CA (1967 TO DATE)  
1 REFERENCES IN FILE CAPLUS (1967 TO DATE)

REFERENCE 1: 118:7326

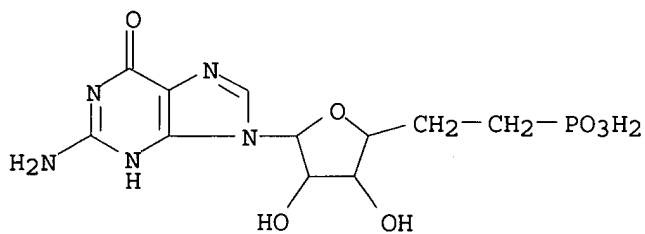
L9 ANSWER 5 OF 6 REGISTRY COPYRIGHT 1995 ACS  
RN 117544-95-3 REGISTRY  
CN 6H-Purin-6-one, 2-amino-9-[6-[bis(phenylmethoxy)phosphinyl]-5,6-dideoxy-.beta.-D-ribo-hexofuranosyl]-1,9-dihydro- (9CI) (CA INDEX NAME)  
MF **C25 H28 N5 O7 P**  
SR CA  
LC STN Files: CA, CAPLUS, CASREACT  
DES 5:B-D-RIBO



1 REFERENCES IN FILE CA (1967 TO DATE)  
1 REFERENCES IN FILE CAPLUS (1967 TO DATE)

REFERENCE 1: 109:231447

L9 ANSWER 6 OF 6 REGISTRY COPYRIGHT 1995 ACS  
RN 117513-96-9 REGISTRY  
CN 6H-Purin-6-one, 2-amino-9-(5,6-dideoxy-6-phosphono-.beta.-D-ribo-hexofuranosyl)-1,9-dihydro- (9CI) (CA INDEX NAME)  
MF **C11 H16 N5 O7 P**  
SR CA  
LC STN Files: CA, CAPLUS, CASREACT  
DES 5:B-D-RIBO



1 REFERENCES IN FILE CA (1967 TO DATE)

## 1 REFERENCES IN FILE CAPLUS (1967 TO DATE)

REFERENCE 1: 109:231447

=&gt; fil hcaplus

FILE 'HCAPLUS' ENTERED AT 11:55:12 ON 13 NOV 95  
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FILE COVERS 1967 - 13 Nov 1995 VOL 123 ISS 20  
FILE LAST UPDATED: 11 Nov 1995 (951111/ED)

Roles are now available from 1967 to date.

=> d l11 1-2 all

L11 ANSWER 1 OF 2 HCAPLUS COPYRIGHT 1995 ACS  
AN 1993:7326 HCAPLUS  
DN 118:7326  
TI Methylenephosphonate nucleoside analogs and oligonucleotide analogs  
made therefrom  
IN Buhr, Chris; Matteucci, Mark; Bischofberger, Norbert W.; Froehler,  
Brian  
PA Gilead Sciences, Inc., USA  
SO PCT Int. Appl., 77 pp.  
CODEN: PIXXD2  
PI WO 9213869 A1 920820  
DS W: AU, CA, FI, JP, KR, NO, RU  
RW: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LU, MC, NL, SE  
AI WO 92-US1020 920207  
PRAI US 91-652978 910208  
DT Patent  
LA English  
IC ICM C07H019-20  
ICS C07H019-10; A61K048-00; A61K031-675  
CC 33-9 (Carbohydrates)  
OS MARPAT 118:7326  
GI

\* STRUCTURE DIAGRAM TOO LARGE FOR DISPLAY - AVAILABLE VIA OFFLINE PRINT \*

AB Nucleoside phosphonates I [B = purine or pyrimidine nucleic acid  
base; R, R1 = (un)substituted OH, NH2, SH; R2 = H, allyloxy,  
allylthio, MeO, MeS, F; R3 = H, OH, F, OCH2Ph, OSiMe2CMe3,  
OCPh(C6H4OMe-4)2, OCPh2C6H4OMe-4; R2R3 = O, bond; X = O, S] were  
prepd. as intermediates for oligonucleotide analogs II (R4, R5 = H,  
protective group; n = 1-30). Thus, 3'-O-tert-butyldimethylsilyl-N2-  
isobutyryl-2'-deoxyguanosine was prepd. from 2'-deoxyguanosine in 3  
steps and was treated with Ph3P:CHP(O)(OPh)2 followed by  
hydrogenation to give the phosphonate III.

ST nucleoside methylphosphonate; ribohexofuranosylmethylphosphonate  
purine pyrimidine

IT Nucleotides, preparation  
RL: SPN (Synthetic preparation); PREP (Preparation)  
(5'-deoxy-5'-(phosphonomethyl) analogs, prepn. of)

IT Nucleotides, polymers  
RL: SPN (Synthetic preparation); PREP (Preparation)  
(oligo-, methylphosphonate-linked, prepn. of)

IT 961-07-9, 2'-Deoxyguanosine  
RL: RCT (Reactant)  
(acylation of)

IT 951-77-9, 2'-Deoxycytidine  
RL: RCT (Reactant)  
(benzoylation of)

IT 50-89-5, Thymidine, reactions 69256-17-3  
RL: RCT (Reactant)

(dimethoxytritylation of)  
IT 144822-44-6P  
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation)  
(prepn. and debenzoylation of)  
IT 144822-69-5P  
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation)  
(prepn. and deblocking of)  
IT 144822-39-9P  
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation)  
(prepn. and desilylation of)  
IT 4836-13-9P 68892-42-2P 69123-94-0P 144822-72-0P  
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation)  
(prepn. and dimethoxytritylation of)  
IT 144822-52-6P **144822-53-7P** 144822-57-1P 144822-58-2P  
144822-60-6P 144822-61-7P 144822-67-3P 144822-71-9P  
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation)  
(prepn. and ester hydrolysis of)  
IT 51549-37-2P 144822-37-7P 144822-49-1P 144822-64-0P  
144822-74-2P  
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation)  
(prepn. and reaction of, with phosphoranylidene-methylphosphonate)  
IT 144822-38-8P 144822-40-2P 144822-42-4P 144822-50-4P  
144822-65-1P 144822-75-3P  
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation)  
(prepn. and redn. of)  
IT 67219-55-0P 68892-41-1P 144822-48-0P 144822-63-9P  
144822-73-1P  
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation)  
(prepn. and silylation of)  
IT 144822-41-3P 144822-43-5P 144822-51-5P 144822-66-2P  
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation)  
(prepn. and transesterification of)  
IT 99540-94-0P 144822-45-7P 144822-46-8P 144822-47-9P  
**144822-54-8P 144822-56-0P** 144822-59-3P  
144822-62-8P 144822-68-4P 144822-76-4P  
RL: SPN (Synthetic preparation); PREP (Preparation)  
(prepn. of)  
IT 40615-39-2P  
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation)  
(prepn., benzoylation, and detritylation of)  
IT 22400-41-5  
RL: RCT (Reactant)  
(reaction of, with protected nucleosides)

L11 ANSWER 2 OF 2 HCAPLUS COPYRIGHT 1995 ACS  
AN 1988:631447 HCAPLUS  
DN 109:231447  
TI Synthesis of 4'-(hydroxymethyl)guanosine and a phosphonate analog of  
guanylic acid  
AU Martin, John C.; Verheyden, Julien P. H.  
CS Syntex Res., Palo Alto, CA, 94304, USA  
SO Nucleosides Nucleotides (1988), 7(3), 365-74  
CODEN: NUNUD5; ISSN: 0732-8311  
DT Journal  
LA English  
CC 33-9 (Carbohydrates)  
Section cross-reference(s): 1, 10  
OS CASREACT 109:231447  
GI

\* STRUCTURE DIAGRAM TOO LARGE FOR DISPLAY - AVAILABLE VIA OFFLINE PRINT \*

AB The synthesis of 4'-(hydroxymethyl)guanosine (I) and the phosphonate  
analog II of guanylic acid proceed from a common intermediate,  
2',3'-O-isopropylidene-N2-(monomethoxytrityl)-guanosine-5'-aldehyde  
(III). I and II were found inactive when tested in vitro against

herpes simplex virus types 1 and 2, parainfluenza 3, and respiratory syncytial virus.

ST hydroxymethylguanosine prepn virucide; guanylic acid phosphonate analog

IT Virucides and Virustats  
((hydroxymethyl)guanosine and guanylic acid phosphonate analog, inactive)

IT 52417-04-6  
RL: RCT (Reactant)  
(monomethoxytritylation followed by deacetylation of)

IT **117544-95-3P**  
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation)  
(prepn. and debenzylation of)

IT 117513-88-9P  
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation)  
(prepn. and deprotection of)

IT 117513-95-8P  
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation)  
(prepn. and detritylation of)

IT 117513-86-7P  
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation)  
(prepn. and oxidn. of)

IT 117513-87-8P  
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation)  
(prepn. and reaction of, with paraformaldehyde)

IT 117513-93-6P  
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation)  
(prepn. and redn. of)

IT 117513-94-7P  
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation)  
(prepn. and transesterification of, with sodium benzyl oxide)

IT 85-32-5DP, Guanylic acid, phosphonate analog 117513-89-0P  
117513-90-3P 117513-91-4P **117513-96-9P**  
RL: SPN (Synthetic preparation); PREP (Preparation)  
(prepn. of)

IT 117513-92-5  
RL: RCT (Reactant)  
(reaction of, with guanosine aldehyde deriv.)

=> fil uspatful

FILE 'USPATEFULL' ENTERED AT 11:55:25 ON 13 NOV 95

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FILE COVERS 1971 TO PATENT PUBLICATION DATE: 7 Nov 1995 (19951107/PD)

FILE LAST UPDATED: 8 Nov 1995 (951108/ED)

HIGHEST PATENT NUMBER: US5465422

CA INDEXING IS CURRENT THROUGH 8 Nov 1995 (951108/UPCA)

ISSUE CLASS FIELDS (/INCL) CURRENT THROUGH: 7 Nov 1995 (19951107/PD)

REVISED CLASS FIELDS (/NCL) CURRENT THROUGH: AUG 1995

USPTO MANUAL OF CLASSIFICATIONS THESAURUS ISSUE DATE: APR 1995

>>> Page images are available for patents from 1/1/93.

<<<

>>> Complete CA file indexing for chemical patents (or equivalents) <<<

>>> is included in file records. A thesaurus is available for the <<<

>>> USPTO Manual of Classifications in the /NCL, /INCL, and /RPCL <<<

>>> fields, and for the WIPO International Patent Classifications <<<

>>> (IPC) in the /IC field.

=> s l9 or l9/d

0 L9

0 L9/D

L12

0 L9 OR L9/D